I submit to you the blue ribbon commission that there are opportunities out there to far more then just finds solutions to the spent fuel "problem" you can recommend avenues for further research, for avenues that lead to the unexpected, look for these! , So some more words on NASA's flexible path to human exploration of space and how your commission can further invigorate this great effort. Space based nuclear power has been a historically rich partnership between NASA, DOE and the Naval reactor research office, renew these ties!, and add in this vexing question of spent fuel.

I have identified a possible source of synergy between the NASA proposed line item in the 2011 budget and the DOE, possibly in the future involves our spent fuel project. The NASA proposed 2011 budget asks for a Space Technology Research Grants program that will target US citizen graduate students to conduct research at $400,000 per grant, "Flexible Power Arrays, Microwave/Laser Power Transmission, Energy Storage Systems" are just some of the suggested ideas, I highlight these ideas from the 2011 budget because these are NASA needs that both NASA and DOE spend billions on.

Producing the plutonium for the RTG's

Testing the RTG on the ground

Where am I going with this? A question someone posted on the forum nasaspaceflight.com, "what would be involved in a rover being sent to a crater in permanent shadow at the lunar South Pole Atkinson crater" I responded, you would need a RTG! And that turns your lunar robotic precursor mission into a multi billion dollar flag ship mission! So, what to do? The Blue ribbon committee will still be in session in 2011, you could shape the debate some what. For one DOE could match the $400,000 pot with its own matching funds and/or provide from DOE's national labs partner researchers to collaborate with NASA choice of graduate students. (A)My choice of an award would be to fund the student and her adviser with the task to research a, "Flexible Power Arrays, Microwave/Laser Power Transmission, and Energy Storage Systems" to power a robotic lunar precursor mission into the shadows of a polar crater. Another award I would make would be in the spirit of flexible path, can we design a space based reactor that burns spent fuel (Molten salt?) For a powersat AND be a "bimodal thermal nuclear thruster" and perform additional services.

We taxpayers who dream of an exciting future of exploration and social and economic justice want nothing more then to meet policy makers who dream the same, NASA's flexible path may promise using common engines and boosters to launch all US payloads to orbit from commercial satellites to humans beyond earth orbit, it would involve a highly modular system from the very large booster to the smallest. We can as a nation can do the same with a common in space reactor that performs many missions. It can perform the mission of burning spent fuel ,It can provide power in common with a solar power architecture provide power to the earth or as suggested above use power to build a space based industry or to power a mission. Perhaps the same design could be modified to perform the bimodal propulsion and power generating model s, I do not know, it a question that I believe needs to be asked!

All of these projects would provide an answer to an important question; would this payload need provide a launch rate as massive as to bring down costs for those launch services? Leveraging the nuclear waste trust fund to fly "flight ready, revenue ready" payloads could answer this once and for all.

NASA and the DOE should fund a “funded space act agreement” with the space based solar power PG&E project, The DOE would benefit by adding a common docking and transmission mechanism between the solar power satellite and the nuclear generator. Our student grad research could provide the nucleus to this but would not be a replacement to a true NASA/DOE space act agreement in the in space based for positive cash flow government corporation power generator. At best our PG&E power contractor might be a commercial minority share holder in this civilization building project that we plan to in some future decades to privatize to the private sector, any space act agreement partner and individual researchers **and there employees (ESOPS?)**, and the graduate researcher who decades before brought this space based economy into being should have there interests honored when the day comes to privatize this venture.